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Building & Highway Material Testing Laboratory

An ISO 9001:2008 Certified Company

NABL - Accredited Laboratory as per ISO / IEC-17025 : 2005

JAS-ANZ BSCIC ISO 9001 REGISTERED

Job No.: CTCE/BBMP/KRIDL/W.No.13/BC/Shape.T/2017-18 16.03.2018

TEST REPORT ON FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of Work	:	Improvements of asphalting at Santhosh Nagara and Prashanth Nagara surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/221/2017-18 Dated: 07.02.2018
* Sample ID	:	Hot Mix Plant, Bangalore
Technical Reference	:	IS : 2386(Part -1)-1963 (RA-2011)
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	16.03.2018

Sl.No.	Description	Result
1	Flakiness Index	12.65%
2	Elongation Index	13.50%
3	Combined Flakiness & Elongation Index	26.15%

*Information is furnished by the Customer/Representative.

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Comments:

→ Maximum allowable Flakiness & Elongation Index for Bituminous Macadam is 30%

Note:

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Job No: CTCE/BBMP/KRIDL/W.No.13/BM/Stripping/2017-18 19.03.2018

TEST REPORT ON STRIPPING VALUE OF ROAD AGGREGATE (STATIC IMMERSION TEST)

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Santhosh Nagara and Prashanth Nagara surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/221/2017-18 Dated: 07.02.2018
Technical reference	:	IS: 6241
* Type of Mix	:	Bituminous Macadam
Date of Testing	:	19.03.2018

Type of binder	: 60/70
Percentage of binder used	: 5.0% by wt.
Total weight of aggregate	: 200 g
Total weight of binder	: 10.0 g
Temperature of water-bath	: 40° C

Observation Number	Stripping, Percentage	Average, Percentage	Average Retained Coating, %
1	2.9	3.07	96.93
2	3.1		
3	3.2		

*Information is furnished by the Customer/Representative.

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Comments:

→ Minimum allowable Aggregate retained coating for Bituminous Macadam is 95%

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Job No: CTCE/BBMP/KRIDL/W.No.13/BM/Sp_Wa/2017-18 19.03.2018

TEST REEPORT ON SPECIFIC GRAVITY AND WATER ABSORPTION

* Customer : **Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency : **Technical Manager (West),** KRIDL, Bangalore.
* Name of Work : Improvements of asphalting at Santhosh Nagara and Prashanth Nagara surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference : BBMP/EE/DD/WO/221/2017-18 Dated: 07.02.2018
Technical reference : IS : 2386(Part -3)-1963 (RA-2011)
* Type of Mix : Bituminous Macadam
Date of Testing : 19.03.2018

Sl. No.	Details	Notation	Test Number			Mean Value
			Test 1	Test 2	Test 2	
1	Weight of aggregate suspended in water with the basket	W_1 g	2005	2006	2007	
2	Weight of basket suspended in water	W_2 g	750	750	750	
3	Weight of saturated aggregate in water	$(W_1 - W_2) = W_s$ g	1255	1256	1257	
4	Weight of saturated surface dry aggregate in air	W_3 g	2009	2010	2011	
5	Weight of water equal to the volume of the aggregate	$(W_3 - W_S)$ g	754	754	754	
6	Weight of oven dried aggregate	W_4 g	1998	2000	2001	
7	Specific Gravity	$W_4/(W_3-W_S)$	2.650	2.653	2.654	2.652
8	Apparent Specific gravity	$W_4/(W_4-W_S)$	2.689	2.688	2.690	2.689
9	Water Absorption	$((W_3-W_4)*100)/W_4$	0.55%	0.50%	0.50%	0.53%

Information is furnished by the Customer/Representative.

Comments:

=> Maximum allowable Aggregate Water absorption value for Bituminous Macadam is 2.0%

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BM/Bitumen/2017-18 19.03.2018

TEST REPORT ON BITUMEN CONTENT DETERMINATION OF BITUMINOUS MACADAM MIX

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Santhosh Nagara and Prashanth Nagara surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/221/2017-18 Dated: 07.02.2018
* Sample ID	:	Roads at Santhosh Nagara and Prashanth Nagara Ward No.13
Technical Reference	:	IRC:SP:11-1984
Date of Testing	:	19.03.2018

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	482	482
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	18	18.00
7. Bitumen content in %	3.60	3.60
8. Average	3.60	

Information is furnished by the Customer/Representative.

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Job No.: CTCE/BBMP/KRIDL/W.No.13/BM/Gradation/2017-18 19.03.2018

TEST REPORT ON GRADATION OF BITUMINOUS MACADAM MIX

* Customer	:	**Asst. Executive Engineer,** Shettyhalli Sub Division, BBMP, Bangalore.
* Agency	:	**Technical Manager (West),** KRIDL, Bangalore.
* Name of work	:	Improvements of asphalting at Santhosh Nagara and Prashanth Nagara surrounding area in Mallasandra Ward No.13, Shettyhalli Sub Division, BBMP, Bangalore.
* Reference	:	BBMP/EE/DD/WO/221/2017-18 Dated: 07.02.2018
* Sample ID	:	Roads at Santhosh Nagara and Prashanth Nagara Ward No.13
Technical Reference	:	IS:2386 and IRC:SP:11-1984
Date of Testing	:	19.03.2018

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0	100	100
19	37.25	7.73	7.73	92.27	90-100
13.2	82.35	17.09	24.81	75.19	56-88
4.75	259.6	53.86	78.67	21.33	16-36
2.36	51.22	10.63	89.30	10.70	4-19
0.3	17.22	3.57	92.87	7.13	2-10
0.075	10.28	2.13	95.00	5.00	0-8

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-04 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
26.5	0	0	0.00	100	100
19	33.25	6.90	6.90	93.10	90-100
13.2	83.26	17.27	24.17	75.83	56-88
4.75	259.6	53.86	78.03	21.97	16-36
2.36	52.32	10.85	88.89	11.11	4-19
0.3	26.65	5.53	94.41	5.59	2-10
0.075	5.21	1.08	95.50	4.50	0-8

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